NAME: ID#:

SHOW ALL YOUR WORK

1. (**3points**) Find and sketch the domain of the function $f(x,y) = \dfrac{\sqrt{x-y^2}}{1-x^2}$.

2. (**4points**) Find $\lim_{(x,y)\to(0,0)} \dfrac{6xy^3}{2x^4+y^4}$ or show that it does not exist.

3. (**3points**) Find the first partial derivatives of the function $u = te^{w/t}$.